One appraisal method supports varied, effective, equivalent execution styles.

November 15, 2001

Joseph F. Morin (jfmorin@isd-inc.com)
Integrated System Diagnostics, Inc.
P.O. Box 3440
889 Shore Road
Pocasset, MA 02559
http://www.isd-inc.com
A Software Engineering Institute Transition Partner

Topics

- One Method Definition
- Three Usage Modes
- Two Primary Styles
- Process and Activity Definition Details
  - Allowable Variations
  - Implementation Guidance & Variations
- Examples of Techniques and Tools
- Summary / Questions

One Method Definition

- Three Phases Decomposed into Eleven Processes:
- Appraisal Planning & Preparation
  - Analyze Requirements
  - Develop Appraisal Plan
  - Select and Prepare Team
  - Obtain and Analyze Preliminary Objective Evidence
  - Prepare for Collection of Objective Evidence
- Conduct Appraisal
  - Examine Objective Evidence
  - Verify and Validate Objective Evidence
  - Document Objective Evidence
  - Generate Appraisal Results
- Report Results
  - Deliver Appraisal Results
  - Package and Archive Appraisal Assets

Integrated System Diagnostics INCORPORATED

Definition versus Description

- Each Process Well Defined:

- Purpose / Outcome
- Entry / Exit Criteria
- Inputs / Outputs
- Key Points
- Tools and Techniques
- Metrics
- Verification and Validation
- Records
- Tailoring
- Interface with Other Processes

- Each Process Decomposed into Activities
- Variable Temporal Flow of Processes:
  - Concurrent, Iterative, Synchronized

More Detail & Flexibility

- Each Activity characterized by:
  - Required Practices
  - Parameters and Allowable Limits of Variation
  - Optional Practices
  - Implementation Guidance
- Instruments and Work Aids
  - Characterized not Proscribed.

Three Usage Modes

Internally Motivated

- Internal Process Improvement:
  - Sponsor “owns” the organization
  - Baseline Process Capability
    - Internal and / or External Purpose
  - Support Process Improvement Initiatives
    - Identify opportunities for improvement
    - Measure progress in achieving plans

Externally Required

- Supplier Selection:
  - Sponsor does not "own" the organization(s)
  - Risk Identification:
    - characterize the process-related risk of awarding a contract to a supplier
    - one of multiple factors in award decision
  - Establish a baseline for subsequent process monitoring with the selected supplier

Long Term Relationships

- Process Monitoring:
  - Sponsor may or may not “own the organization
  - Risk Management / Reduction:
    - Contract management and / or process monitoring & improvement efforts tailored based on observed weaknesses and strengths
  - Focuses on a long-term teaming relationship between the “buyer” and the “supplier
  - Results may be input for an incentive/award fee decision or to set contract reporting and deliverable documentation requirements

Two Primary Styles

Confirm Assertions / ID Flaws

- Verification (The suggested approach):
  - Understand what objective evidence is available, and how it contributes toward implementation of model practices within the appraisal scope.
  - Continually consolidate data to determine progress toward sufficient coverage of model practices.
  - Focus appraisal resources by targeting those areas for which further investigation is needed to collect additional data or verify the set of objective evidence.
  - Avoid unnecessary or duplicated effort that does not contribute additional information toward achievement of sufficient coverage or to obtain significantly greater confidence in the appraisal results.

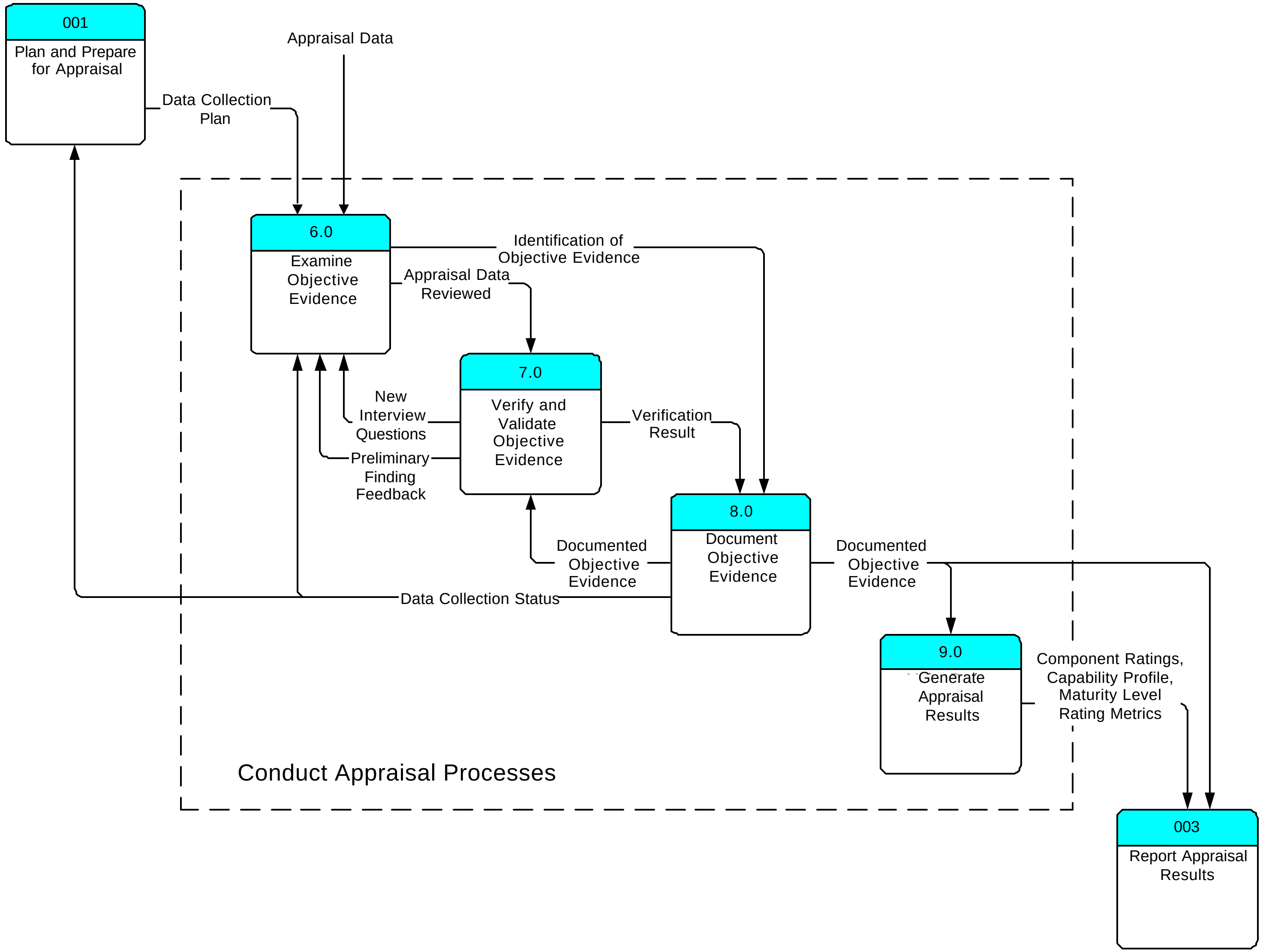
Integrated System Diagnostics INCORPORATED

Extract and Analyze Info

- Discovery (Still an allowable approach):
  - Gather objective evidence in terms of the roles, responsibilities and work processes of the organization. Analyze and transform it in terms of contribution toward implementation of model practices within the appraisal scope.
  - Periodically consolidate data to determine progress toward sufficient coverage of model practices & organization sample.
  - Identify additional Information Needed and determine how to collect it.
  - Effort beyond that needed to achieve sufficient coverage or to significantly improve confidence in the appraisal results may be justified in terms of increased understanding and motivation among participants.

A Sample of Process and Activity Definition Details Allowable Variations Implementation Guidance & Examples of Techniques and Tools

Conduct Appraisal Phase



Three Closely Related Processes

- Examine Objective Evidence *
  - 3.6.1 Review Objective Evidence (Instruments)
  - 3.6.2 Review Objective Evidence (Presentations)
  - 3.6.3 Review Objective Evidence (Documents)
  - 3.6.4 Review Objective Evidence (Interviews)
- Verify and Validate Objective Evidence
  - 3.7.1 Verify Objective Evidence
  - 3.7.2 Characterize Implementation of Model Practices
  - 3.7.3 Validate Practice Implementation Gaps
- Document Objective Evidence
  - 3.8.1 Take / Review / Tag Notes
  - 3.8.2 Record Presence/Absence of Objective Evidence
  - 3.8.3 Document Practice Implementation Gaps
  - 3.8.4 Status the Data Collection Plan

Examine OE - Purpose/Outcome

- **Purpose**

Collect information about the practices implemented in the organization and relate the resultant data to the reference model. Perform the activity in accordance with the data collection plan. Take corrective actions and revise the data collection plan as needed.

- **Outcome**

The team has sufficient data to create appraisal findings and to make judgements about the implementation of practices, as well as satisfaction of Specific and Generic Goals.

Examine OE - Entry / Exit

- Entry Criteria
  - Data collection has been planned
  - Sponsor has signed off on the appraisal plan
  - The appraisal team is trained and is familiar with the appraisal plan
  - Participants have been briefed on the appraisal process
- Exit Criteria
  - The coverage of the reference model and the organizational scope has been achieved, and the team is ready to produce the appraisal outputs.

Examine OE - Inputs/Outputs

- **Inputs**
- Appraisal Data
  - Appraisal Schedule
  - Objective Evidence
  - Notes
  - Data Tracking Work Aids
  - Statements of Practice Implementation Gaps
  - Feedback on Preliminary Findings
- Data Collection Plan
  - Interview Schedule
  - Document List
  - Interview Questions

- **Outputs**
- Updated Appraisal Data
  - Appraisal Schedule
  - Objective Evidence
  - Notes
  - Data tracking work aids
  - Statements of Practice Implementation Gaps
- Updated Data Collection Plan
  - Interview Schedule
  - Document Request List
  - Interview Questions

Examine OE - Key Points

- Key Points

  Efficient collection of Objective Evidence results from carefully creating and executing against the data collection plan. Effective contingency planning, as well as the use of work aids to monitor progress, are key points to consider. The team must be able to focus on examining the most relevant information available, rather than be distracted by a mission to 'root out' key evidence.

Examine OE - Tools & Tech.

- Tools and Techniques

  Wall charts and other visual aids are often used to display the results of data collection activities. Electronic tools are prevalent among experienced Lead Appraisers, and can be a very effective tool for continually monitoring and updating the inventory of Objective Evidence.

Examine OE - Metrics

- Metrics

  Tracking the actual coverage obtained, as compared to the planned coverage, in each data collection activity facilitates timely corrective actions - where they are needed. The most critical resource during an appraisal is time. Use of a timekeeper during data collection and verification activities provides feedback on team performance. Recording the actual duration of planned events helps the team in taking actions to recover from unexpected events.

Examine OE - V&V

- Verification and Validation

  The appraisal method provides detailed verification and validation procedures for Objective Evidence. Verification and validation procedures are described in great detail in process 8 "Verify and Validate Objective Evidence."

Examine OE - Records

- Records

  Work aids used to record and track progress of data collection activities are retained for traceability and provide an important input to a final report describing the appraisal - if the sponsor requests a final report. The duration and effort required for specific data collection events can be recorded to provide useful historical data for planning subsequent appraisals.

Examine OE - Tailoring

- Tailoring

  The method is flexible in terms of the use of customized data collection instruments, presentations, document reviews and interviews. Specialized forms of these data collection methods can be constructed to meet the goals of the appraisal. For example, an organization-specific questionnaire could be used that contains local jargon rather than a standardized questionnaire. Standardized presentations can be employed to provide the team with an "inbrief" at the start of the appraisal. The method also provides flexibility in choosing the number, duration, style, and make-up of interview sessions - within specified boundaries.

Initially…….

You Need Everything!

As you get it you need to keep track of it and be able to access it for efficient judgements and status checks.

A Wall Chart View

Source	Rating	Notes	Requirements Management
			SG 1. **Manage Requirements - Requirements are managed and inconsistencies with project plans and work products are identified.** [SP 1.1, SP 1.2, SP 1.3, SP 1.4, SP 1.5]
		G	GG 2. **Institutionalize a Managed Process - The process is institutionalized as a managed process.** [GP 2.1, GP 2.2, G 2.3, GP 2.4, GP 2.5, GP 2.6, GP 2.7, GP 2.8, GP 2.9, GP 2.10
			SP 1.1-1 Obtain an Understanding of Requirements - Develop an understanding with the requirements providers on the meanin of the requirements.
			SP 1.2-2 Obtain Commitment to Requirements - Obtain commitment to the requirements from the project participants.
			SP 1.3-1 Manage Requirements Changes - Manage changes to the requirements as they evolve during the project.
			SP 1.4-2 Maintain Bi-directional Traceability of Requirements - Maintain bi-directional traceability among the requirements an the project plans and work products.
			SP 1.5-1 Identify Inconsistencies between Project Work and Requirements - Identify inconsistencies between the project plans and work products and the requirements.

Rating Worksheet (Excel)

Project Planning PA

Goal	Practice	Project	Type	Inst char.	Instantiation Observation	Information Needed	OU char.	OU Preliminary Finding	Goal Rating	Goal Level Findings	Supporting Evidence
SG 1	SP 1.1-1	P1									
		P2									
		P3									
	SP 1.2-1	P1									
		P2									
		P3									
	SP 1.3-1	P1									
		P2									
		P3									
	SP 1.4-1	P1									
		P2									
		P3									
SG 2	SP 2.1-1	P1									
		P2									
		P3									
	SP 2.2-1	P1									
		P2									
		P3									
	SP 2.3-1	P1									
		P2									
		P3									
	SP 2.4-1	P1									
		P2									
		P3									
	SP 2.5-1	P1									
		P2									
		P3									
	SP 2.6-1	P1									
		P2									
		P3									
	SP 2.7-1	P1									
		P2									
		P3									

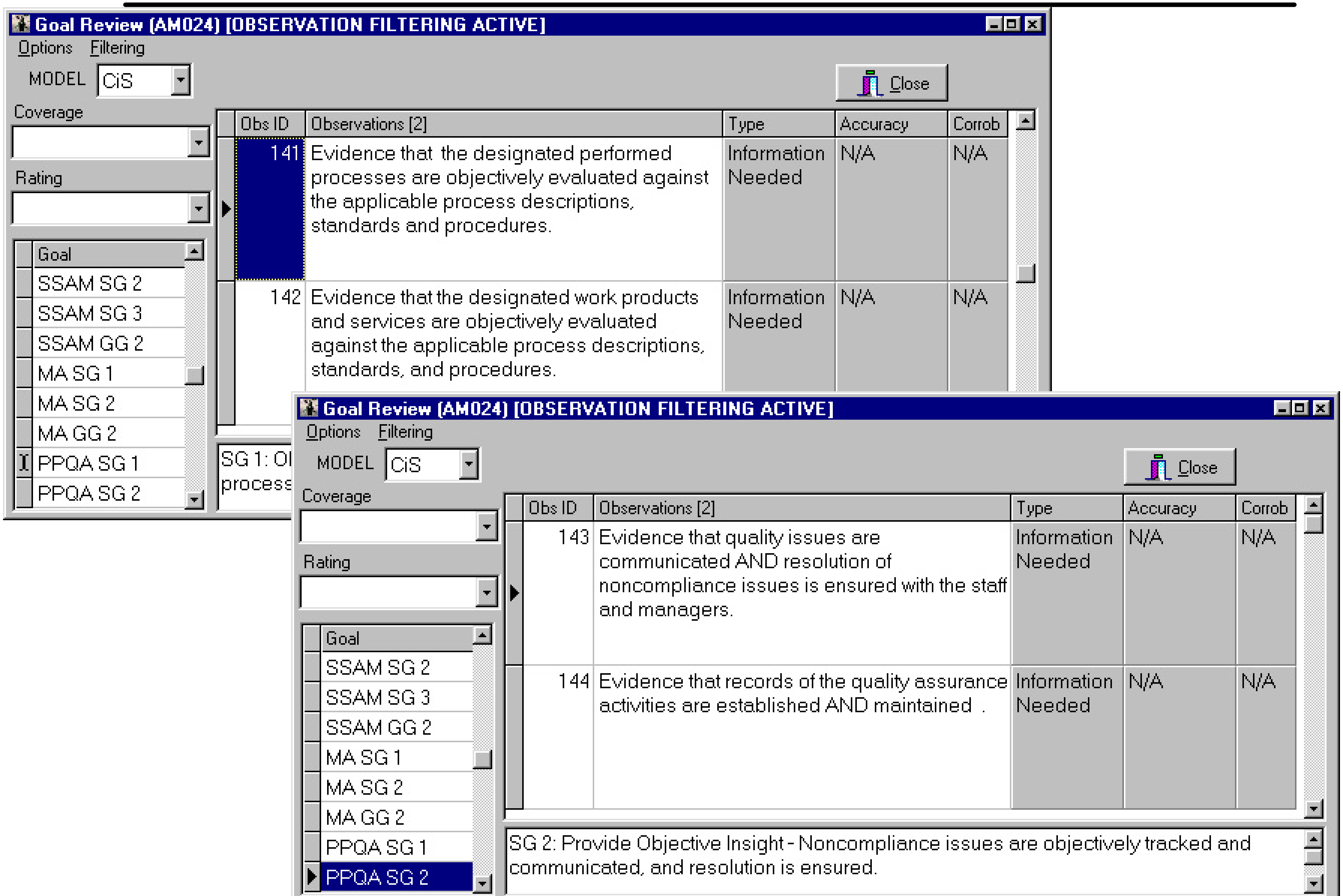
PII Tracking Work Aid

Practice ID	<PA> SP x.y-1 <*Practice statement*>.			
PII ID	Direct Work Products (EST.WP)	Indirect Artifacts (EST.ART)	Affirmations (EST.IAFF) (Future / Deferred: see exploratory questions)	
			Practitioner Response	User (Client) Response
Example Evidence (Look Fors / Listen Fors)	<direct artifacts; primary expected work products which, if missing, cast serious doubt as to whether the practice is implemented>	<indirect or incidental artifacts; side effects, mechanisms, etc.>	Exploratory questions targeted toward practitioners (enactors of the process)	Exploratory questions targeted toward users of the work products (clients)
Mapping to Organizational Assets	*Organizational direct artifact*	*Organizational indirect artifact*	*Organizational affirmation response - practitioner* *(e.g. ,designated person assigned responsibility)*	*Organizational affirmation response – user*
Project -1 Assets…	*Project-1 work product*	*Project-1 indirect artifact*	*Project-1 affirmation response – practitioner*	*Project-1 affirmation response – user*
Project -2 Assets…	*Project-n work product*	*Project-n indirect artifact*	*Project-n affirmation response – practitioner*	*Project-1 affirmation response - user*
Assessment Considerations	<Guidance, interpretation, or discussion targeted to assessors>			
Exploratory Questions for Affirmations And Further artifact s needed	General (PA Goals): • (general questions at PA level) Specific (SP or GP): • Practice-level question covering intent of the practice; may be a rewording of the practice statement in question format Detailed Probing: • Targeted at a particular aspect or component of a practice; questions should be developed and reviewed by assessment team based on triage Focused Questions: • Specific questions, situational context, patterns, etc.			
CMMI Notes	(model CRs, etc.)			

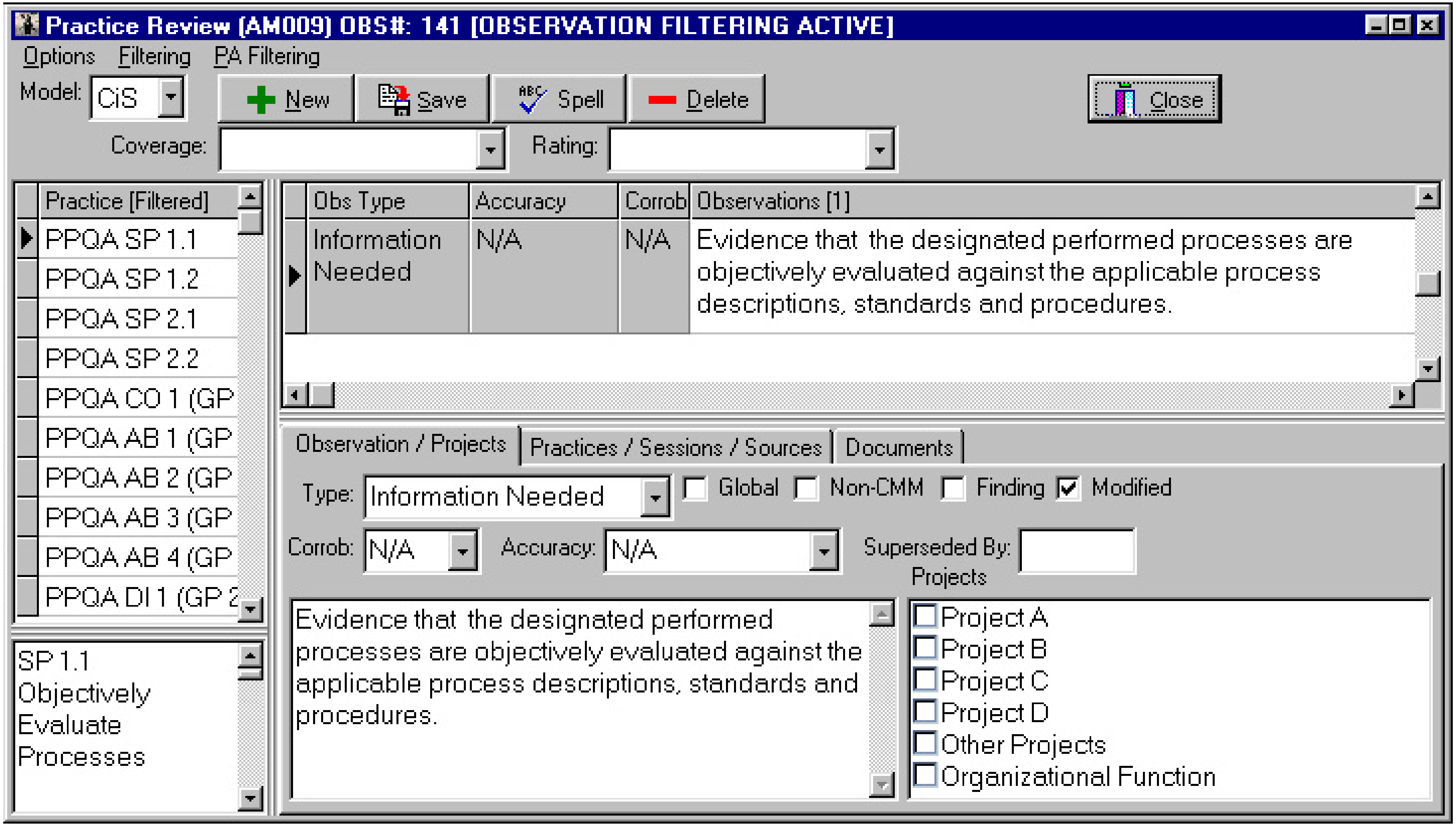
PPQA PIID Template

Practice ID	PPQA SP1.1-1 *Objectively evaluate the designated performed processes against the applicable process descriptions, standard, and procedures.*		
PII ID	Direct Artifacts (Work Products)	Indirect Artifacts ("Footprints")	Affirmations (Written or Verbal)
Example Evidence (Look Fors / Listen Fors)	[1. Audit reports] [2. Noncompliance reports]	[3. Corrective actions] • Quality assurance plan, identifying the processes subject to evaluation, and procedures for performing evaluations. • Applicable process descriptions, standards, and procedures. • Action items for noncompliance issues, tracked to closure. • Criteria and checklists used for work product evaluations (e.g. what, when, how, who). • Schedule for performing process evaluations (planned, actual)) at selected milestones throughout the product development life cycle. • Org chart or description identifying responsibility, objectivity, and reporting chain of the QA function. • Quality assurance records, reports, or database. • Records of reviews or events indicating QA involvement (e.g. attendance lists, signature)	
Assessment Considerations	• "This process area primarily applies to evaluations of projects and services, but also applies to evaluations of non-project activities and work products such as training evaluations." • Refer to the Project Planning PA for more information about identifying processes to be objectively evaluated. • Consider the PPQA PA as an enabler for GP2.9 in the context of other process areas. • The frequency of evaluations or audits is typically defined in a quality assurance plan. Look for evaluations performed throughout the lifecycle, not just at the end a project or in close proximity to the assessment. • A typical implementation of this practice is through the development and use of a quality assurance plan that may be a standalone document or incorporated into another plan. • Depending on the culture of the organization, the process and product quality assurance role may be performed, partially or completely, by peers, and the quality assurance function may be embedded in the process.		
CMMI Notes			

An RDB Based Tool

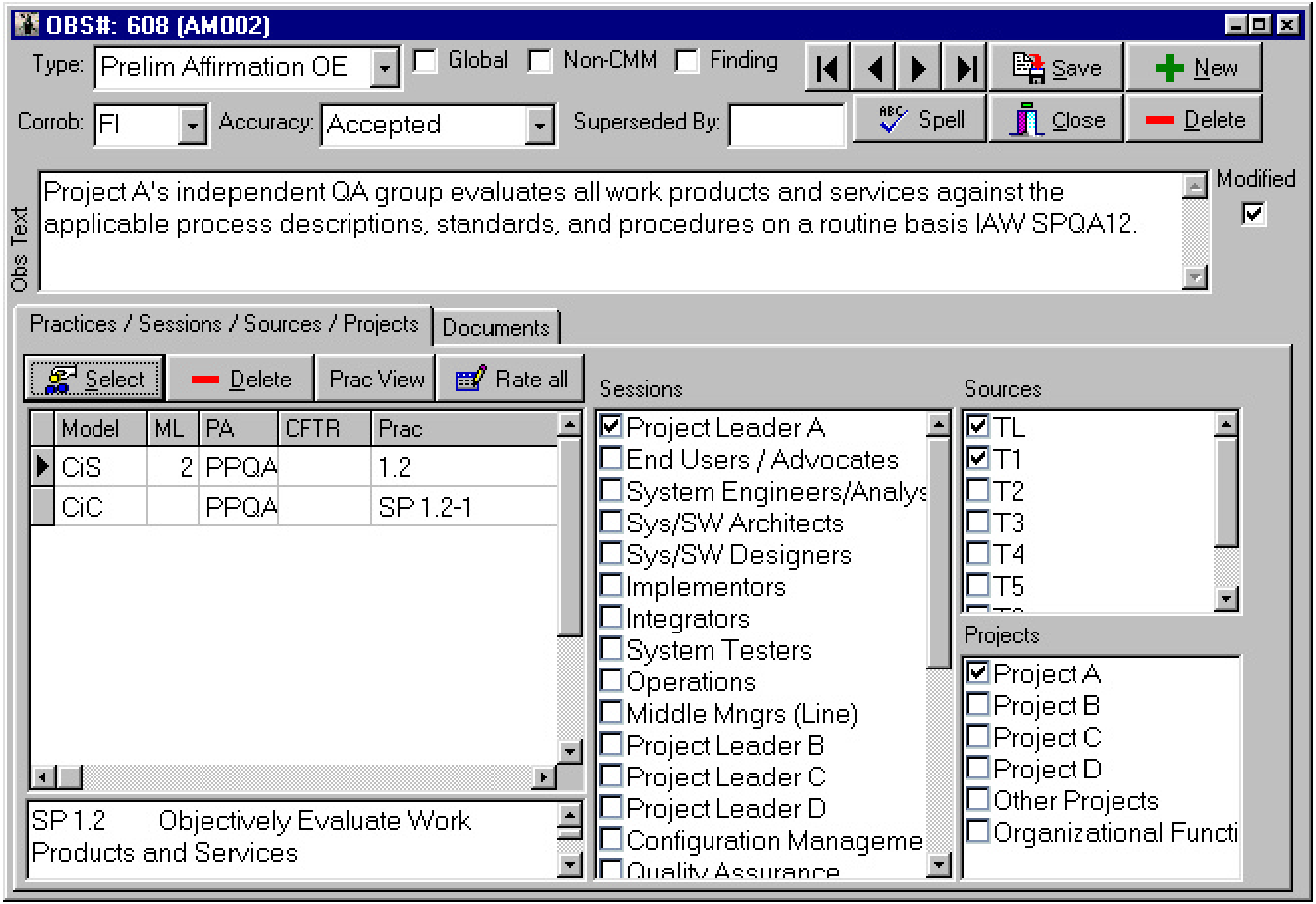


Practice Implementation



Integrated System Diagnostics INCORPORATED

Traceability to Model & OU



Integrated System Diagnostics INCORPORATED

Full Model Text

Text Window (AM062)

Objectively evaluate the designated work products and services against the applicable process descriptions, standards, and procedures.

Typical Work Products

1. Audit reports
2. Noncompliance reports
3. Corrective actions

Subpractices

1. Select work products to be evaluated, based on documented sampling criteria if sampling is used.
2. Establish and maintain clearly stated criteria for the evaluation of work products.

The intent of this subpractice is to provide criteria, based on business needs, such as the following:

- What will be evaluated during the evaluation of a work product
- When or how often a work product will be evaluated
- How the evaluation will be conducted
- Who must be involved in the evaluation

3. Use the stated criteria during the evaluations of work products.
4. Evaluate work products before delivery to the customer.
5. Evaluate work products at selected milestones in their development.
6. Perform in-progress or incremental evaluations of work products and services against process descriptions, standards, and procedures.
7. Identify each noncompliance found during the evaluations.
8. Identify lessons learned that improve processes for future products and services.

Close

Review OE - Instruments 1

◆ Activity 3.6.1 Description

This activity is focused on contributing to the Team's understanding of the extent of Practice Implementation from the preliminary Objective Evidence. Activities in the planning phase were focused on administering instruments to help the organization to provide relevant data. Here the term "Instrument" is used to describe questionnaires, surveys and other written information that serves as a source of Objective Evidence about the implementation of practices. The planning process also included activities to inventory and analyze the preliminary OE for purposes of determining readiness for the appraisal and developing the on-site data collection plan. In this current activity the preliminary OE is examined as a source of corroborating data evidencing the extent of practice implementation. Note that the output of this activity (and all activities in this process) must lead to the team member recording information, per process 3.8 Document Objective Evidence.

Review OE - Instruments 2

- “Unique” Required Practices
  - none
- “Common” Required Practices
  - Review the data and decide whether or not it is acceptable as Objective Evidence.
  - Trace the information to the appropriate Practice in the model.
  - Trace the information to the appropriate part of the appraised organization (i.e., identify the project, or the organizational unit it relates to).

Review OE - Instruments 3

- Parameters and Limits

At least one instrument must be used during the conduct of the appraisal. The most common instrument used is the Organization's Practice Implementation Indicator Description. Where organizations have not yet implemented this practice, a questionnaire that gathers closed-ended responses and comments about the implementation of each model practice in each sampled project in the Organizational Unit.

Review OE - Instruments 4

- Optional Practices
  - Summaries of practice implementation data for a group of projects in an organization may be useful during the selection of the projects used to represent the Organizational Unit.
  - Create and administer a specialized questionnaire that is tailored the the characteristics of the organization, or the goals of the appraisal.

Review OE - Instruments 5

◆ Implementation Guidance

- The use of instruments to gather written information from members of the organization provides a relatively low cost data collection technique, when done well. Data of this type tend to be most useful when provided early in the appraisal conduct, and can lead to valuable insights about where data may be sought during subsequent data collection events.
- The most prevalent instrument used in the SCAMPI method is referenced in the process description "Obtain and Analyze Preliminary Objective Evidence." That instrument documents the organization's implementation of the practices in CMMI, for each project in the organizational scope of the appraisal.
- A practice-based questionnaire is also a commonly used instrument during appraisals. Such questionnaires typically have a series of focused questions, each one providing an opportunity for the respondent to answer a closed-ended question about a practice. In addition, the respondent is given an opportunity to write a clarifying comment that serves to elaborate on the closed-ended response. …
- It is also the responsibility of the appraisal team leader to prevent duplicate data entry on multiple instruments. No organization should be asked to provide the same information in two (or more) formats.

Compliance Matrix

Evaluation date:	**9/24/01**					
Project xyz	**Participants Providing Data: Ms. Software PM**					
Key Practice	**Full Description**		**Implementation**		**Document Reference**	**Evaluators Comments**
	Requirements Management					
RM-CO-1	The project follows a written organizational policy for managing the system requirements allocated to software		Requirements Management is performed by xyz personnel according to the Corp Engineering Responsibilities document, section 1. Individual xyz project members are mapped to Corp Roles in our Project Plan dated mm/dd/yy.		Corp Engineering Responsibilities pages 12-13; Corp Roles Document pages 35-38; XYZ Project Plan Appendix A	
RM-AB-1	For each project, responsibility is established for analyzing the system requirements and allocating them to hardware, software, and other system components.		The Verification Cross Reference Index, a requirements traceability matrix, was assigned to Fred Flintstone, the Systems Engineering Lead (see xyz Project Org Chart, & xyz Project Roles Assignment). This assignment is indicated on the xyz Project Docume		doc refs	
RM-AB-2	The allocated requirements are documented.		The xyz Statement of Work (SOW), and Technical Requirements Document (TRD), as provided by our customer, CUSTOMER, were used as the basis for requirements allocation. The SRS was derived from these documents and contains the allocated requirements.		doc refs	

PII Project Instrument

~~PA. Practice designation~~ (i.e. PP SP 1.1-1)

Practice Description

(i.e. Establish and maintain a top-level work breakdown structure (WBS) to estimate the scope of the project.)

~~Sub-practices of the practice~~.
1) Develop a WBS structure …
2) Identify the work products …
3) Identify work products …
4) Identify work products …

Typical Work Products of the practice.
(i.e. from the model and/or PII's …

- Task Descriptions
- Work product descriptions
- Work Breakdown Structure)

~~Assessment Considerations~~

- Determination of WBS usage for this practice must be based on top-level WBS only, not its fully elaborated and expanded form as referenced in subsequent practices of this PA.
- Top-level work breakdown structure should be driven by and linked to specified product requirements. (See Requirements Management PA).
- Level of supporting documentary evidence will vary based on project size/duration. Larger projects may have minutes from estimation meetings, estimation teams, and tools use, etc. Smaller may have none. Assessment team will need to consense on the WBS elements that will be expected. See PP SP1.4-1 for derivation of detailed work breakdown structures from top-level work breakdown structures.

~~CMMI Notes~~

Direct Work Products Objective Evidence

Comments/Clarifications

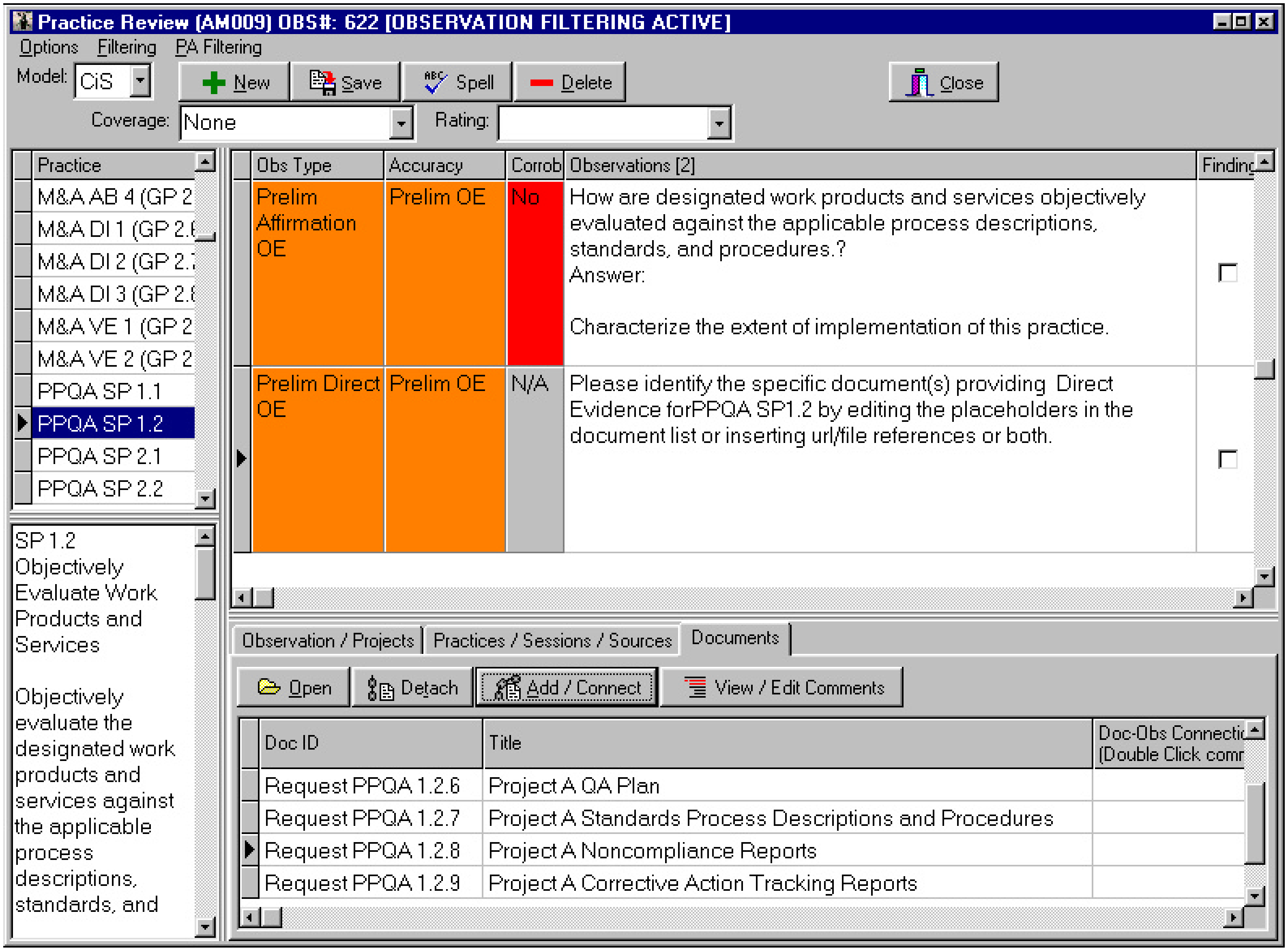
Project's assessment of practice implementation (justified by OE and Comments and Clarifications)

- ☐ Fully Implemented
- ☐ Largely Implemented
- ☐ Partially Implemented
- ☐ Not Implemented
- ☐ Not Applicable
- ☐ Alternative Practice

~~Indirect Work Products Objective Evidence (e.g.~~ footprints)

~~Comments/Clarifications~~

Using an Electronic Tool



Review OE - Presentations 1

- Activity 3.6.2 Description
  - Demonstrations of on-line tools, or libraries to be accessed by the appraisal team are often the best way for members of the team to find the data and information they need. The history of process improvement in the organization, or the status of current improvement projects can sometimes be best conveyed to the appraisal team in the form of a presentation. While the amount of data to be collected using presentations will be minimal, the ability to receive information and ask questions in real time, makes this a valuable data collection technique.

Review OE - Presentations 2

- “Unique” Required Practices
  - An Opening Briefing must be held at the start of the "on site" period.
  - The team must permit presentations of information by knowledgeable members of the organization. Presentations may or may not be "required" by the team, depending on the usage mode and the appraisal goals.
- “Common” Required Practices
  - Review the data and decide whether or not it is acceptable as Objective Evidence.
  - Trace the information to the appropriate Practice in the model.
  - Trace the information to the appropriate part of the appraised organization (i.e., identify the project, or the organizational unit it relates to).

Review OE - Presentations 3

- Parameters and Limits
- The opening briefing must be delivered, but the length and detail provided in the briefing can be tailored to meet the needs of the appraisal at hand.
- There is no requirement that one or more presentations be included in the data collection plan (beyond the requirement to hold an opening briefing).
- It is not necessary that all team members be present at every presentation, though it may be advantageous. A minimum of two team members must be present in order to consider any presentation a valid data collection session.
- Team members take notes during presentation to document information for later use.

Review OE - Presentations 4

- Optional Practices
  - Allow the organization to provide presentations or demonstrations of tools, as a means of providing Objective Evidence about the implementation of model practices.
  - Establish a standardized "boilerplate" for the Organizational Unit, or projects within the OU to use in orienting the appraisal team.

Review OE - Presentations 5

- Implementation Guidance
  - Presentations about the history of process improvement in an organization can be very revealing.
  - Demonstrations of tools supporting the process infrastructure are sometimes the most convenient means of communicating Objective Evidence.
  - A Configuration Management Library often embodies the process by which engineers manage configurations. These engineers may take for granted that certain standards are enforced through the tool and be unable to explain what those standards are in the abstract.
  - An organization's Metrics Database can often embody the analytical techniques in use, as well as the communication channels that are supported across the Organizational Unit.

Review OE - Documents 1

- Activity 3.6.3 Description

  A substantial portion of the data used by the appraisal team is derived from documents they review. Most of the primary artifacts used as indicators of practice implementation are documents. Document review is an effective means to gain detailed insight about the practices in use in the organization. However, without a clear focus on the data being sought, document review can consume a great deal of time - as team members attempt to read everything in hopes that something useful will be discovered.

Review OE - Documents 2

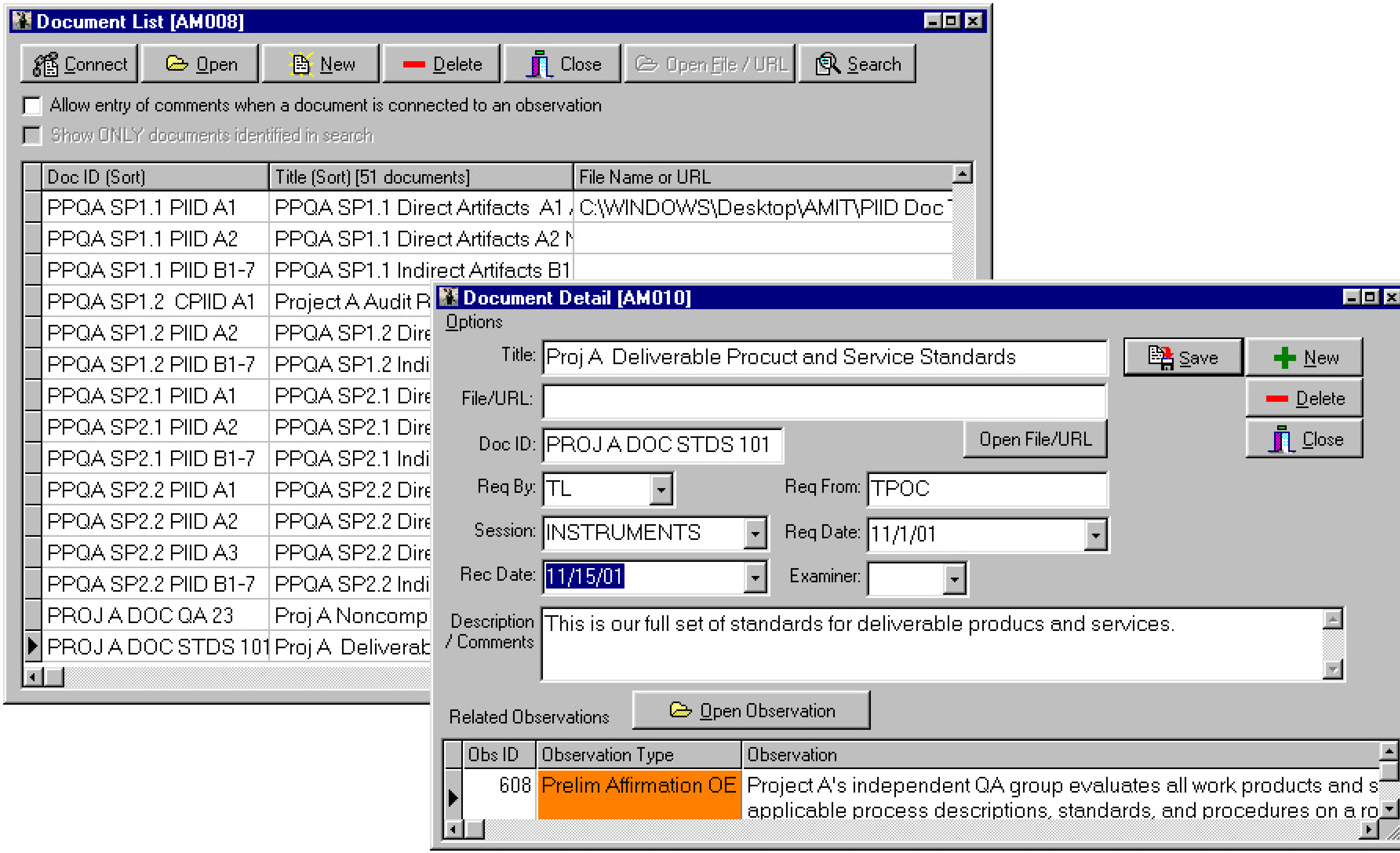
- "Unique" Required Practices
  - A catalogue of documents used as a source of Objective Evidence is established and maintained by the appraisal team.

- "Common" Required Practices
  - Review the data and decide whether or not it is acceptable as Objective Evidence.
  - Trace the information to the appropriate Practice in the model.
  - Trace the information to the appropriate part of the appraised organization (i.e., identify the project, or the organizational unit it relates to).

Review OE - Documents 3

- Parameters and Limits
- The catalogue of documents must contain the following information about each document:
  - name (with version or ID number as appropriate)
  - project or organizational sub-unit to which it pertains
  - process area or other model component the document relates to
- All SCAMPI appraisals must use documents as a source of information on the extent to which practices have been implemented in the Organizational Unit and within the sampled projects.

Document Inventory



Review OE - Documents 4

- Optional Practices

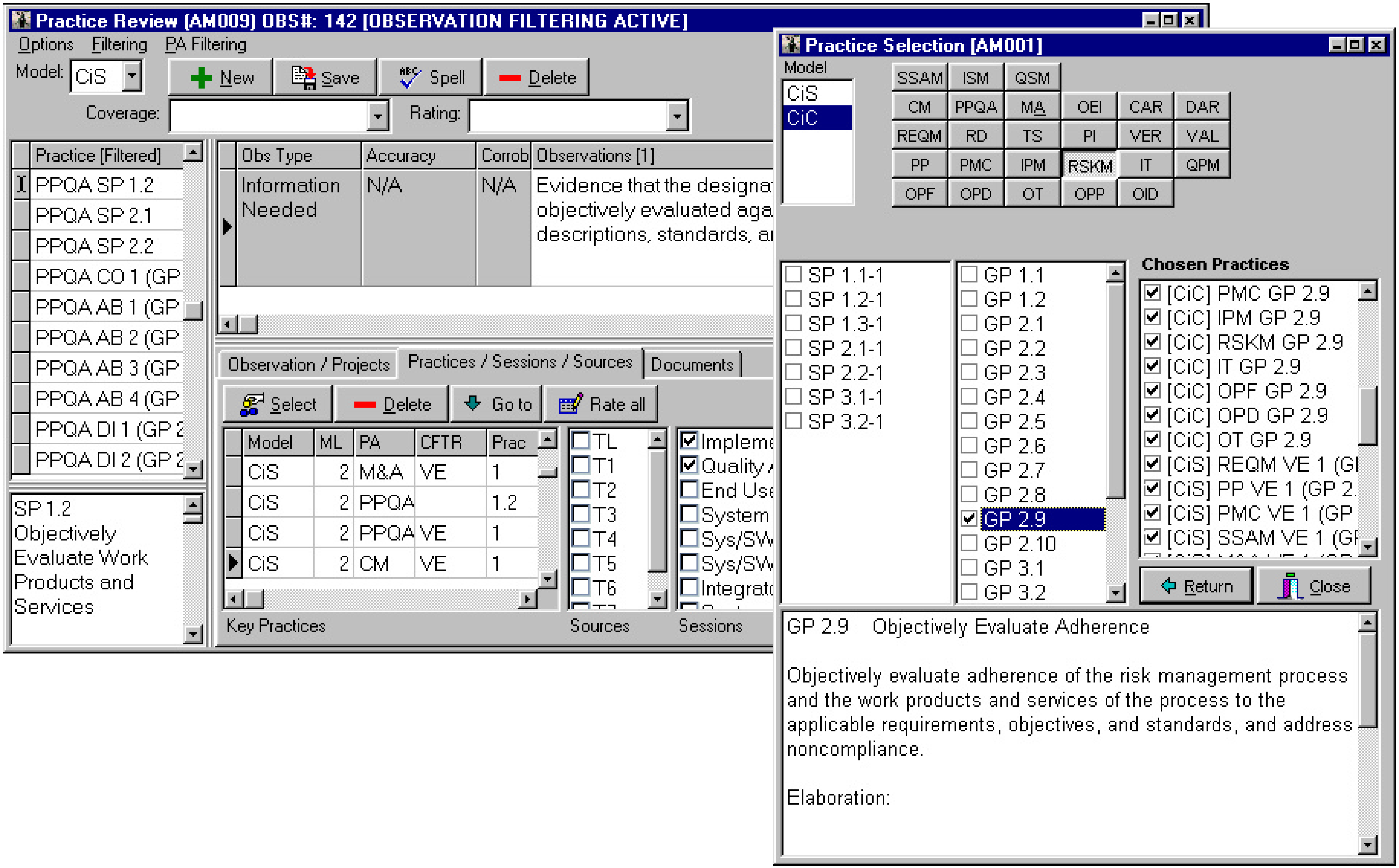
  For organizations with substantial intranets containing document libraries, a member of the organization familiar with the document library should provide a demonstration of the web-based tools. Links to other documents and other features of the web-based document library must be tested prior to the team's use during the appraisal.

Review OE - Documents 5

- Implementation Guidance

  One or more team member(s) will seek data for every practice in the model scope of the appraisal through document review. This does not require a document for every practice, as any given document is likely to provide data relevant to multiple practices. To the greatest extent possible the location of documented evidence relating to every practice should be recorded in advance of the team's arrival at the site where the appraisal will occur. Organizations with established improvement infrastructures typically maintain this type of information in order to track their improvement efforts against the model. Where this information is incomplete, the team will be forced to discover the linkages between the CMMI and the organization's implemented practices - and will therefore require more time to perform the appraisal.

OE Can Span PAs &Practices

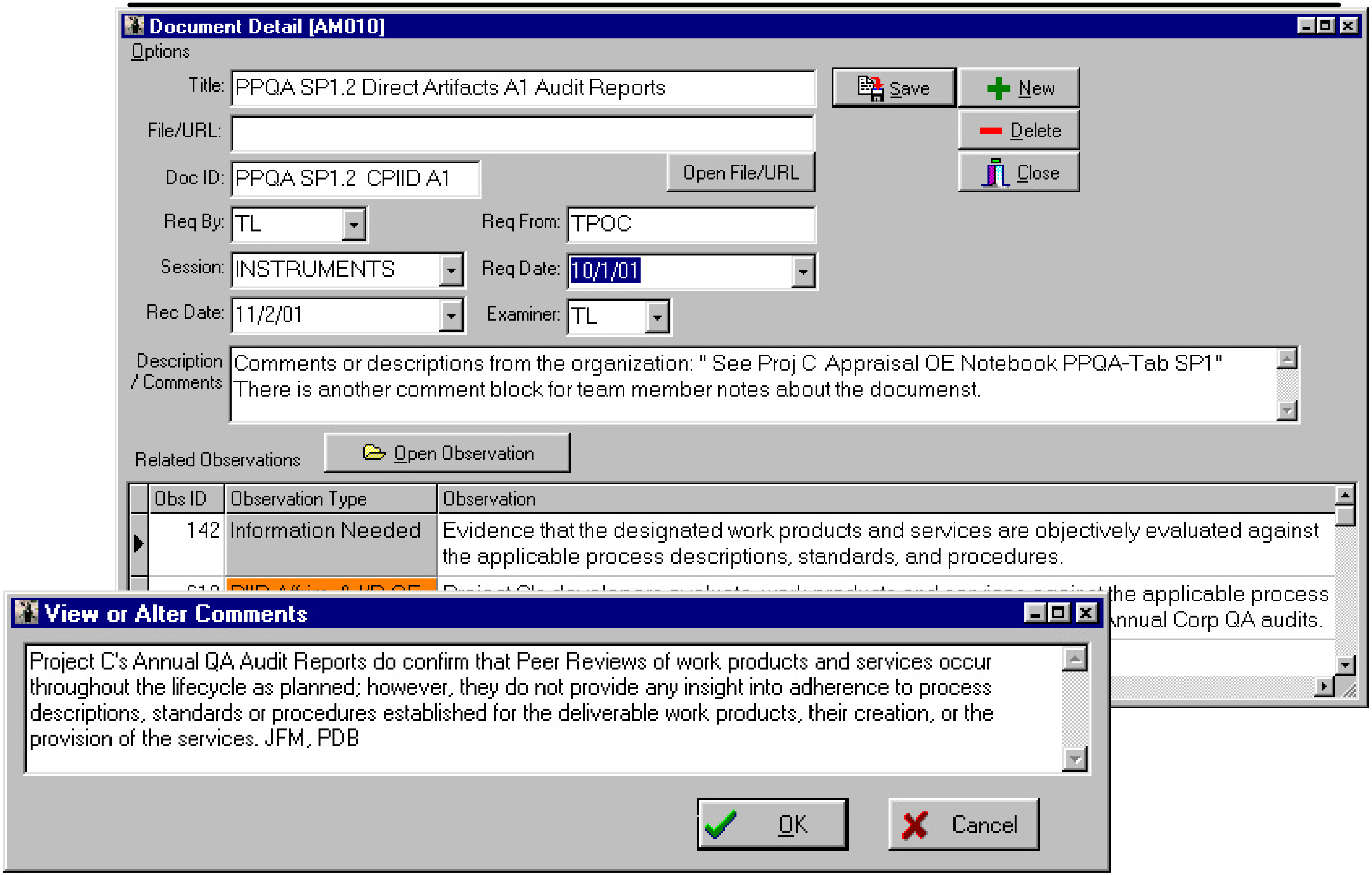


Review OE - Documents 6

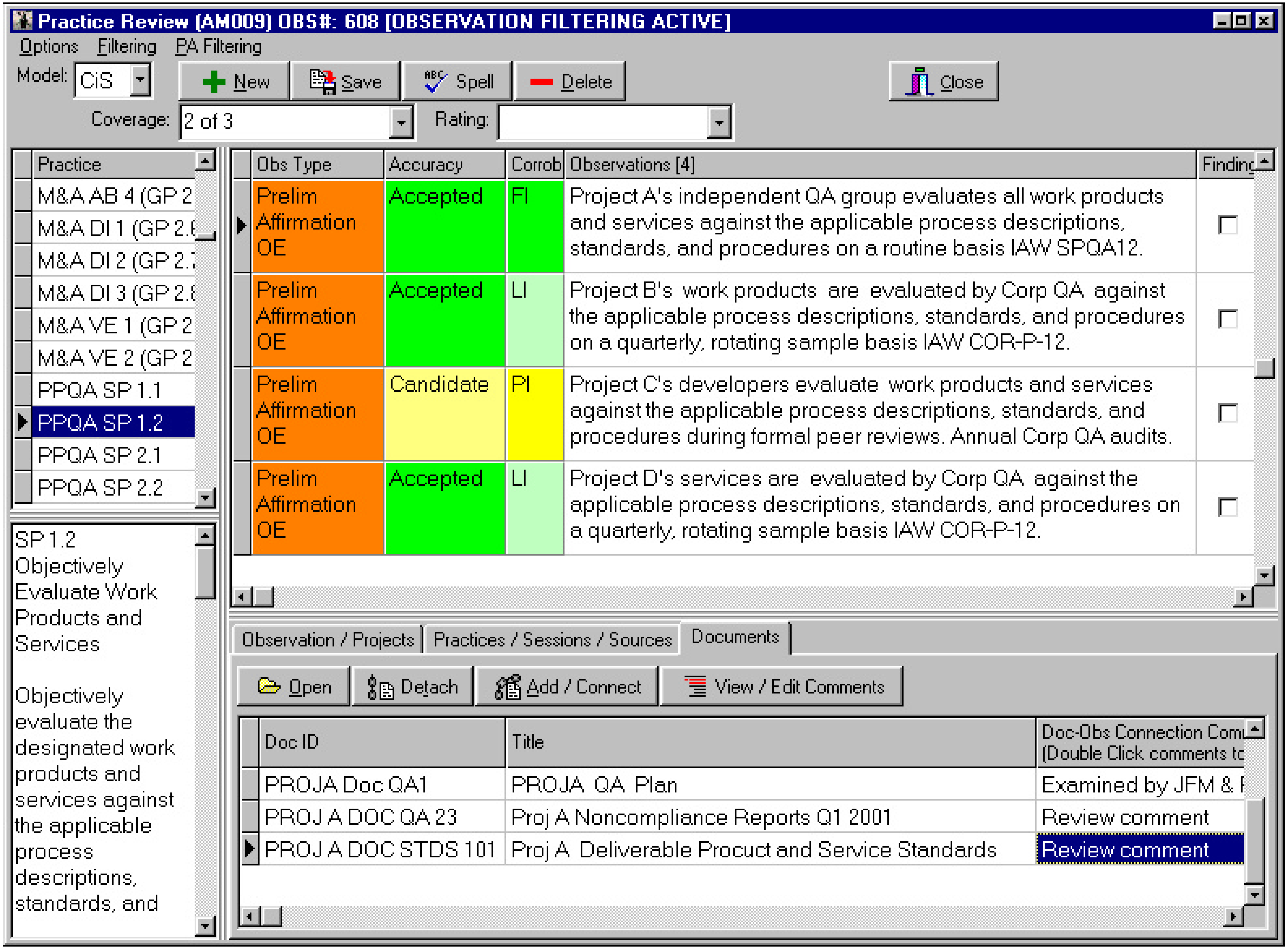
Implementation Guidance

- Documents reviewed during an appraisal can be classified into three different levels: organizational, project and implementation.
- By providing further insight into the policies and procedures that guide the organization's processes, organization level documents sometimes help the team to eliminate the need for a question during an interview, or sharpen the focus for a question. Review of these documents provides a context for understanding the expectations placed on projects within the organization.
- Through review of project level documents, the team gains further insight into each scheduled interviewee's role in the project they support as well as the terminology generally accepted within the organization. This may lead to refinement or modification of interview scripts.
- The team typically reviews implementation level documents to validate information gathered from other sources - such as interviews or higher level documents. Documents on this level provide an audit trail of the processes used and the work performed. Review of these documents frequently provides verification of practices found in organization- and project-level documents.

Examine OE Documents



Review Answers and Docs



Review OE - Interviews 1

- Activity 3.6.4 Description

  A variety of interview techniques are available, and the ATL works with the team to schedule different types of interviews during the conduct of activity 3.5.2 Prepare Data Collection Plan.

Review OE - Interviews 2

- "Unique" Required Practices
  - A list of interviews used as a source of Objective Evidence must be established and maintained by the appraisal team.
  - The rules of confidentiality and the expected use of appraisal data must be communicated to every interviewee.
- "Common" Required Practices
  - Review the data and decide whether or not it is acceptable as Objective Evidence.
  - Trace the information to the appropriate Practice in the model.
  - Trace the information to the appropriate part of the appraised organization (i.e., identify the project, or the organizational unit it relates to).

Integrated System Diagnostics INCORPORATED

Review OE - Interviews 3

◆ Parameters and Limits

- All SCAMPI appraisals must use interviews as a source of information on the extent to which practices have been implemented in the Organizational Unit and within the sampled projects.
- All interviews must include at least two members of the appraisal team - designated by the ATL.
- Full coverage of the CMMI, the Organizational Unit and of the organization's lifecycle(s) must be achieved with the Objective Evidence considered by the team. Therefore the pool of potential interviewees must cover all elements of the process in use in the Organizational Unit.
- Project and/or Program management personnel are interviewed individually, or grouped according to project. The focus of the discussion in these interviews will therefore be scoped to a particular project, rather than across the sampled projects,
- Functional Area Representatives (FARs) should be interviewed in a group, sampling across the projects within the Organizational Unit. The focus of the discussion in these interviews will therefore be scoped to a particular set of practices, used across the projects.

Review OE - Interviews 4

- Optional Practices
  - Request that interviewees bring a document or other artifact with them to their interviews for a "show and tell" style interview.
  - Use of Video/Teleconference technology to conduct interviews at a distance. Appraisers are cautioned not to rely too heavily on this method. If substantial portions of the interview data are gathered using this technology, it may tend to limit the amount of information collected.

Review OE - Interviews 5

Implementation Guidance

- Interviews provide the most flexible source of detailed data. Face to face interaction with people who enact the practices being investigated allow the team to seek detailed information, and to understand the interrelationships among various practices. Detailed information to address specific data collection needs can be sought and verified in real time.
- It is important to avoid sampling interviewees for a session such that two people with a direct reporting relationship (i.e., a superior and one of their direct reports) are in the same interview session. This applies to members of the appraisal team as well. People who have this type of relationship with one another may be uncomfortable with the expectation for them to be completely candid during the interview.
- Samples of interviewees are typically grouped into categories that roughly correspond to lifecycle phases, engineering disciplines, organizational groupings, and/or Process Area affinities. As stated previously, interviews of project/program management personnel are typically grouped by project, while FAR sampled for a given interview come from across the Organizational Unit.
- There are three basic forms of interviews used in the SCAMPI method.

Review OE - Interviews 6

- Implementation Guidance (Standard Interviews)
  - The most structured approach is the Standard Interview, which is scheduled in advance and employs a series of scripted questions. Each standard interview typically involves a set interviewees with similar responsibilities in the organization (e.g., Quality Assurance, Systems Engineers, or Middle Managers). The schedule and location of each interview sessions is communicated to the interviewees well in advance. Questions intended to elicit data about particular practices are prepared and reviewed in advance, and the team follows a defined process for conducting the session. The entire team is present for these interviews, and responsibility for tracking the coverage of individual Process Areas are typically assigned to team members. A single questioner may lead the interview, with the rest of the team listening and taking notes, or the responsibility for asking questions may be distributed among the team members. In any case, it is expected that all team members (who are not asking questions) listen and take notes for all questions.
  - A set of planned interviews will be defined during appraisal planning. As the appraisal progresses, and the Objective Evidence accumulates, the team may find it convenient to cancel one or more of these interviews to use the time for other activities. Such changes in the data collection plan are made in a way that does not violate the coverage criteria described in the process "Verify and Validate OE."

Review OE - Interviews 7

- **Implementation Guidance (On-Call Interviews)**
- A more flexible approach to scheduling interviews is available in the form of On-Call Interviews, which represent a variant of the standard interview. Prospective interviewees are identified and notified in advance, just as described above. However the interviews are only held if team members decide there is a need, and the time will be well spent. The prospective interviewees are therefore asked to block a period of time for such a contingency, and are informed the day before the scheduled time as to whether or not the interview session will actually happen. These interviews need not include the entire appraisal team, thus permitting parallel sessions with different interviewees. However, at least two members of the appraisal team (selected by the ATL) must participate.

Review OE - Interviews 8

- **Implementation Guidance** (Office Hour Interviews)
- Finally, Office Hours Interviews represent an agreement for availability that permits pairs of team members visit interviewees at their desk, cubicle or office. As with the on-call interviews, the prospective interviewees block a specific time period to be available on a contingency basis. It is expected that most prospective interviewees will be able to continue with their daily work and accommodate an interruption if the team needs to speak with them. Here again, only if specific data needs are identified will the interview occur. The interviewees must be informed that they may receive only limited advanced notice for these interviews, though confirming the interview at least a day in advance is a courtesy that should be offered whenever possible.

Summary / Questions

- The Method is much more robustly defined.
- The bar has been raised in terms of the extent of objective evidence that must be collected and analyzed.
- Guidance is provided for varied implementation techniques, instruments, and tools.
  - Planning and preparation are critical to an overall successful event
  - Different choices will result in different pro's and con's for the organization and the appraisal team
- All roads lead to Rome….